

J.-E. Martínez-Legaz - Curriculum Vitae

Date and place of birth: March 26, 1951; Barcelona, Spain

Qualifications

1973 B. Sc. (Mathematics), Universitat de Barcelona

1981 Ph. D. (Mathematics), Universitat de Barcelona

1986 Associate Professor (Applied Mathematics), Universitat de Barcelona

1992 Associate Professor (Foundations of Economic Analysis), Universitat Autònoma de Barcelona

1993 Full Professor (Foundations of Economic Analysis), Universitat Autònoma de Barcelona

Employment history and current appointment

1977-1986 Universitat de Barcelona, Departament d'Equacions Funcionals (changed to Departament de Matemàtica Aplicada i Anàlisi), assistant professor

1986-1990 Universitat de Barcelona, Departament de Matemàtica Aplicada i Anàlisi, associate professor

1990-1993 Universitat Autònoma de Barcelona, Departament d'Economia i d'Història Econòmica, associate professor

1993- Universitat Autònoma de Barcelona, Departament d'Economia i d'Història Econòmica, full professor

Supervision

Supervised 5 PhD students (3 at Universitat de Barcelona, 1 at Universitat Autònoma de Barcelona, and 1 at Università degli Studi di Bergamo)

Awards

EUROPT Fellow 2011

Research Grants

- 1990-1993 DGICYT Grant, Optimization in Economic Models (main researcher: M. S. Santos)
- 1993-1996 DGICYT Grant, Supermodular Functions in Economic Analysis: Indivisibilities and Nonconvexity (main researcher: J.E. Martínez-Legaz)
- 1996-1999 DGES Grant, Convexity and Indivisibilities in Cooperative Games: Theory and Economic Applications (main researcher: J.E. Martínez-Legaz)
- 1999-2002 CICYT Grant, Cooperative Games and Economic Structures: Convexity, Monotonicity and Generalizations (main researcher: J.E. Martínez-Legaz)
- 2002-2005 MCYT Grant, Convexity and indivisibilities in exchange, assignment, demand and production problems (main researcher: J.E. Martínez-Legaz)
- 2005-2008 MEC Grant, Convexity and monotonicity. Applications to Optimization Theory (main researcher: J.E. Martínez-Legaz)
- 2008-2011 MEC Grant, Models of Convex Analysis. Tame Optimization and applications (main researcher: A. Daniilidis)

Memberships

- 2006- ... Editor-in-Chief of Optimization (Taylor & Francis Ltd)
- 1991-2005 Editorial Board of Optimization (Taylor & Francis Ltd)
- 1994- ... Editorial Board of the Journal of Convex Analysis (Heldermann Verlag)
- 2000- ... Editorial Board of the Journal of Global Optimization (Springer)
- 2001-2005 Editorial Board of the Journal of Systems Science and Complexity (Science Press and Allerton Press)
- 2001- ... Editorial Board of TOP (Sociedad Española de Estadística e Investigación Operativa)
- 2001- ... Editorial Board of Cuadernos Aragoneses de Economía (Facultad de Ciencias Económicas y Empresariales de la Universidad de Zaragoza)
- 2009- ... Editorial Board of Set-Valued and Variational Analysis Theory and Applications

2009- ... Editorial Board of the International Journal of Optimization: Theory, Methods and Applications
 2010- ... Editorial Board of the Taiwanese Journal of Mathematics
 2011- ... PanAmerican Mathematical Journal
 2000-2002 Chairman of the international Working Group on Generalized Convexity
 1994-2006 International Scientific Committee of the international Working Group on Generalized Convexity

Conference Programme Committees

Third Franco-Latinamerican Conference in Applied Mathematics and First Chile-CEE School on Optimization (Santiago, Chile, 1992)
 5th International Symposium on Generalized Convexity (Marseille-Luminy, France, 1996)
 6th International Symposium on Generalized Convexity/Monotonicity (Karlovasi, Greece, 1999)
 7th International Symposium on Generalized Convexity/Monotonicity (Hanoi, Vietnam, 2002)
 VI Seminario Internacional de Optimización y Áreas Afines (Lima, Peru, 2003)
 Sixth International Conference of the Association of Asia-Pacific Operational Research Societies within IFORS (New Delhi, India, 2003)
 12th French-German-Spanish Conference on Optimization (Avignon, France, 2004)
 Jornada Economía y Matemáticas (Alicante, Spain, 2005)
 8th Symposium on Generalized Convexity and Generalized Monotonicity (Varese, Italy, 2005)
 VII Seminario Internacional en Optimización y Áreas Afines (Lima, Peru, 2005)
 CODE 2007: Conférence de la SMAI sur l'optimisation et la décision (Paris, France, 2007)
 The Second International Conference on Optimization and Optimal Control (Ulaanbaatar, Mongolia, 2007)
 VIII Seminario Internacional en Optimización y Áreas Afines (Lima, Peru, 2007)
 The International Conference on Nonconvex Programming: Local and Global Approaches (Rouen, France, 2007)

International Symposium on Variational Analysis and Optimization (Kaohsiung, Taiwan, 2008)

The 2009 International Joint Conference on Computational Sciences and Optimization (Sanya, China, 2009)

The 2nd International Conference on Nonlinear Analysis and Optimization (Isfahan, Iran, 2009)

The First World Congress on Global Optimization in Engineering & Science (Changsha, China, 2009)

IX International Seminar in Optimization and Related Areas (Lima, Peru, 2009)

UNESCO-VIETNAM School on Variational inequalities and related problems (Hanoi, Vietnam, 2010)

Parametric Optimization and Related Topics X (Karlsruhe, Germany, 2010)

Workshop of Computational Optimization (Wisła, Poland, 2010)

Colloquium on Optimization in Honor of Professor Michel Volle (Avignon, France, 2010)

Organization of conferences and workshops

Jornades Catalanes de Matemàtica Aplicada (Gerona, Spain, 1994), jointly with D. Azé, G. Gómez, Ch. Horvath and M. Sainz

Cluster of 11 sessions on Generalized Convexity at the 16th International Symposium on Mathematical Programming (Lausanne, Switzerland, 1997)

CODE Workshop on Generalized Convexity and Monotonicity in Economic Modeling (Bellaterra, Spain, 1998), jointly with I. Fradera

Workshop on Mathematical Programming, Games and Networks (Aix-en-Provence, France, 2000), jointly with F. Bloch and A. Soubeyran

Workshop on Mathematical Programming, Games and Networks (Aix-en-Provence, France, 2001), jointly with F. Bloch and A. Soubeyran

II Conference on "Behavioral Learning and Bounded Rationality" (Aix-en-Provence, France, 2002), jointly with B. Sinclair-Desgagné, B. McLeod and A. Soubeyran

LEA Workshop on "Optimization, Games and Economic Applications" (Bellaterra, Spain, 2002), jointly with A. Soubeyran

VI Workshop on "Optimisation-Games-Networks and Applications" (Aix-en-Provence, France, 2003), jointly with B. Cornet and A. Soubeyran

LEA Workshop on "Optimization, Games and Economic Applications" (Bellaterra, Spain, 2005), jointly with A. Soubeyran and H. Stahn

Workshop on "Behavioral Economics in the Light of Mathematics, Psychology, Cognition and Bio Informatics" (Aix-en-Provence, France, 2006), jointly with A. Soubeyran and H. Stahn

International Conference on Nonsmooth and Variational Analysis in Sciences and Engineering (Limoges, France, 2007), jointly with S. Adly, J. Guillerme and J.-B. Hiriart-Urruty

Advanced Course on Optimization: Theory, Methods, and Applications (Bellaterra, Spain, 2009), jointly with A. Daniilidis

Conference on Advances in Optimization and Related Topics (Bellaterra, Spain, 2010), jointly with A. Daniilidis and A. Ferrer

Talks presented at conferences and workshops:

1981

Optimization. Theory and Algorithms (Confolant, France)

1982

IX Jornadas Matemáticas Hispano-Lusas (Salamanca, Spain)

XI International Symposium on Mathematical Programming (Bonn, Germany)

1983

XI IFIP Conference on System Modelling and Optimization (Copenhagen, Denmark)

VIII Symposium on Operations Research (Karlsruhe, Germany)

1984

IX Symposium on Operations Research (Osnabrück, Germany)

1985

Journées Fermat 85 (Toulouse, France)

X Symposium on Operations Research (Munich, Germany)

1986

4th French-German Conference on Optimization (Irsee, Germany) International
Conference on Vector Optimization (Darmstadt, Germany)

Journées Montpellier-Perpignan (Séminaire d'Analyse Convexe) (Montpellier,
France)

XII International Conference on Mathematical Optimization-Theory and Ap-
plications (Eisenach, German Democratic Republic)

1987

29th Annual Conference of the Operational Research Society (Edinburgh,
United Kingdom)

XIII International Conference on Mathematical Optimization-Theory and Ap-
plications (Eisenach, German Democratic Republic)

1988

International Workshop on Generalized Concavity, Fractional Programming
and Economic Applications (Pisa, Italy)

33 Internationales Wissenschaftliches Kolloquium (Ilmenau, German Demo-
cratic Republic)

1989

Colloque International Théorie du Point Fixe et Applications (Marseille-Luminy,
France)

XIV International Conference on Mathematical Optimization-Theory and Ap-
plications (Eisenach, German Democratic Republic)

1990

3rd ECCO Meeting (Barcelona, Spain)

The Fourth Annual Meeting of the International Workshop in Analysis and
Its Applications (Kupari, Yugoslavia)

IX International Conference on Multiple Criteria Decision Making (Fairfax,
U.S.A.)

1991

NATO Advanced Study Institute "Approximation Theory, Spline Functions and Applications" (Maratea, Italy)

Nonsmooth Optimization. Methods and Applications (Erice, Italy)

XVI Simposio de Análisis Económico (Bellaterra, Spain)

1992

Seminar on Nonconventional Preference Modelling (Alicante, Spain)

1st Meeting of the Society for Social Choice and Welfare (Caen, France)

Convergences en Analyse Multivoque et Unilatérale (Marseille-Luminy, France)

3rd Franco-Latinamerican Conference in Applied Mathematics and First Chile-CEE School on Optimization (Santiago, Chile)

1st MODE Meeting (Perpignan, France)

XVII Simposio de Análisis Económico (Bellaterra, Spain)

1993

Journées Inter-Universitaires Analyse Convexe et Probabilités (Marrakech, Morocco)

XIII World Conference on Operations Research (Lisbon, Portugal)

International Conference on Applied Analysis (Hanoi, Vietnam)

ASSET Meeting 1993 (Barcelona, Spain)

XVIII Simposio de Análisis Económico (Bellaterra, Spain)

1994

15th International Symposium on Mathematical Programming (Ann Arbor, U.S.A.)

XIX Simposio de Análisis Económico (Bellaterra, Spain)

1995

3èmes Journées d'Analyse Non Linéaire de l'Université Cadi Ayyad (Marrakech, Morocco)

Workshop on Nonsmooth Analysis and Its Applications (Pau, France)

Workshop on New Directions in the Theory of Markets and Games (Toronto, Canada)

Spanish-Russian Meetings on Games and Decisions (Bellaterra, Spain)

2nd Catalan Days on Applied Mathematics (Font Romeu - Odeillo, France)

XX Simposio de Análisis Económico (Bellaterra, Spain)

1996

Journées d'Analyse Numérique et Optimisation (Meknès, Morocco)

5th International Symposium on Generalized Convexity (Marseille-Luminy, France)

III Catalan Days on Applied Mathematics (Lérida, Spain)

XXI Simposio de Análisis Económico (Bellaterra, Spain)

1997

INFORMS San Diego Spring (San Diego, U.S.A.)

Workshop on Scheduling & Heuristic Search (Riverside, U.S.A.)

16th International Symposium on Mathematical Programming (Lausanne, Switzerland)

XXII Simposio de Análisis Económico (Bellaterra, Spain)

1998

Workshop on Game Theory (Bilbao, Spain)

IV Catalan Days of Applied Mathematics (Tarragona, Spain)

International Conference on Public Economic Theory (Tuscaloosa, U.S.A.)

3rd Spanish Meeting on Game Theory and Applications (Barcelona, Spain)

INFORMS International Israel (Tel Aviv, Israel)

1999

XIV International Conference on Mathematical Programming (Mátraháza, Hungary)

6th International Symposium on Generalized Convexity/Monotonicity (Karlovasi, Greece)

Conference on Duality and Games (Aix-en-Provence, France)

XXIV Simposio de Análisis Económico (Bellaterra, Spain)

2000

INFORMS Spring 2000 (Salt Lake City, U.S.A.)

The Ninth International Colloquium on Numerical Analysis and Computer Science with Applications (Plovdiv, Bulgaria)

Workshop on Mathematical Programming, Games and Networks (Aix-en-Provence, France)

2001

Journée Limoges - Barcelone (Limoges, France)

Seminario Internacional en Optimización y Áreas Afines (Lima, Peru)

2002

Dixièmes Journées du Groupe MODE (Montpellier, France)

XX Coloquio de la Sociedad Matemática Peruana (Lima, Peru)

2003

Mini-symposium Convexité généralisée (Perpignan, France)

12th European Workshop on General Equilibrium Theory (Bielefeld, Germany)

IX Workshop on Well-Posedness in Optimization (Marseille, France)

Seminario Internacional de Optimización y Áreas Afines (Lima, Peru)

XXI Coloquio de la Sociedad Matemática Peruana (Arequipa, Peru)

V Encuentro Nacional en Educación Matemática (Pucallpa, Peru)

VI Workshop on "Optimisation-Games-Networks and Applications" (Aix-en-Provence, France)

2004

I Jornadas SEIO - RSME sobre Programación Matemática (Elche, Spain)
12th French-German-Spanish Conference on Optimization (Avignon, France)

2005

Journée Thématique Quasiconvexité (Montpellier, France)
8th International Symposium on Generalized Convexity and Generalized Monotonicity (Varese, Italy)
VII Seminario Internacional en Optimización y Áreas Afines (Lima, Peru)
Jornadas de Trabajo - Optimización, Noviembre 2005 (Madrid, Spain)
Function Theory on Infinite Dimensional Spaces IX (Madrid, Spain)

2006

The International Conference on Nonlinear Programming with Applications (NPA2006) (Shanghai, China)
INTAS Summer School Nonlinear analysis with applications in Economics, Energy and Transportation (Bergamo, Italy)
GREQAM Summer School Rationality, Social Learning and Complexity (Aix-en-Provence, France)
Workshop “Días de Optimización” (Cholula, Mexico)
Iberian Conference in Optimization (Coimbra, Portugal)
5th Ballarat Workshop on Global and Non-Smooth Optimization: Theory, Methods and Applications (Ballarat, Australia)
International Conference on Mathematics - IMCA 2006 (Lima, Peru)

2007

International Conference on Nonlinear Analysis and Optimization (Isfahan, Iran)

15th International Scientific Conference on Mathematical Methods in Economics and Industry (Herľany, Slovakia)

The Second International Conference on Optimization and Optimal Control (Ulaanbaatar, Mongolia)

11-th Workshop on Well-Posedness of Optimization Problems and Related Topics (Alicante, Spain)

VIII Seminario Internacional en Optimizaci3n y 1reas Afines (Lima, Peru)

XXV Coloquio de la Sociedad Matematica Peruana (Lima, Peru)

Seminario de Optimizaci3n y An1alisis Variacional (Elche, Spain)

2008

International Conference on Modeling, Computation and Optimization (Delhi, India)

Seminario Taller "Avances en Matem1aticas Aplicadas (Cali, Colombia)

Ninth International Conference "Approximation and Optimization in the Caribbean" (San Andres Island, Colombia)

The Second International Conference on Nonlinear Programming with Applications 2008 (Beijing, China)

48th Workshop: Nonsmooth Analysis Optimization and Applications (Erice, Italy)

5th Workshop on Vector Optimization and Related Topics (Madrid, Spain)

9th International Symposium on Generalized Convexity and Generalized Monotonicity (Kaohsiung, Taiwan)

39th Annual Iranian Mathematics Conference (Kerman, Iran)

International Symposium on Variational Analysis and Optimization (Kaohsiung, Taiwan)

9th International Conference on Numerical Analysis and Optimization (Mohammedia, Morocco)

2009

The 2009 International Symposium on Optimization Theory, Methods and Applications (Sanya, China)

The 2nd International Conference on Nonlinear Analysis and Optimization (Isfahan, Iran)

VIII Brazilian Workshop on Continuous Optimization (Mambucaba, Brazil)

IX International Seminar in Optimization and Related Areas (Lima, Peru)

IV Simposio Internacional de Teoría de Aproximación y temas afines (Puebla, Mexico)

2010

International Conference on Optimization and Its Applications (Varanasi, India)

Workshop on Functional Analysis and Optimization (Seville, Spain)

2010 Chinese Symposium on Mathematical Programming (Shanghai, China)

International Functional Analysis Meeting (Valencia, Spain)

4th Workshop on Optimization and Variational Analysis (Elche, Spain)

24th Mini EURO Conference on Continuous Optimization and Information-Based Technologies in The Financial Sector (Izmir, Turkey)

Colloquium on Optimization in Honor of Professor Michel Volle (Avignon, France)

2011

Seminario de Matemáticas (Elche, Spain)

XX European Workshop on General Equilibrium Theory (Baiona, Spain)

III Alicante - Elche - Limoges Meeting on Optimization (Castro Urdiales, Spain)

The 9th EUROPT Workshop on Advances in Continuous Optimization (Ballarat, Australia)

Publications

Martínez-Legaz, J.-E.; Martínón, A.: On the Infimum of a Quasiconvex Function over an Intersection. Application to the Distance Function. *J. Convex Anal.* 18 (2011), no. 3, 687–698.

Rocco, M.; Martínez-Legaz, J.E.: On Surjectivity Results for Maximal Monotone Operators of Type (D). *J. Convex Anal.* 18 (2011), no. 2, 545–576.

Martínez-Legaz, J. E.; Vicente-Pérez, J.: The e-support function of an e-convex set and conjugacy for e-convex functions. *J. Math. Anal. Appl.* 376 (2011), no. 2, 602–612.

Burachik, R. S.; Martínez-Legaz, J. E.; Rocco, M. On a sufficient condition for equality of two maximal monotone operators. *Set-Valued Var. Anal.* 18 (2010), no. 3-4, 327–335.

Goberna, M. A.; Martínez-Legaz, J. E.; Todorov, M. I.: On Motzkin decomposable sets and functions. *J. Math. Anal. Appl.* 372 (2010), no. 2, 525–537.

Goberna, M. A.; González, E.; Martínez-Legaz, J. E.; Todorov, M. I.: Motzkin decomposition of closed convex sets. *J. Math. Anal. Appl.* 364 (2010), no. 1, 209–221.

Martínez-Legaz, J.E.: On maximally q -positive sets. *J. Convex Anal.* 16 (2009), no. 3-4, 891–898.

Martínez-Legaz, J.E.: What is Invexity with Respect to the Same η ? *Taiwanese J. Math.* 13 (2009), no. 2B, 753–755.

Ferrer, A.; Martínez-Legaz, J.E.: Improving the Efficiency of DC Global Optimization Methods by Improving the DC Representation of the Objective Function. *J. Global Optim.* 43 (2009), no. 4, 513–531.

Martínez-Legaz, J.E.: Some generalizations of Rockafellar's surjectivity theorem. *Pac. J. Optim.* 4 (2008), no. 3, 527-535.

Dutta, J.; Martínez-Legaz, J. E.; Rubinov, A. M.: Monotonic analysis over cones. III. *J. Convex Anal.* 15 (2008), no. 3, 561-579.

Martínez-Legaz, J.E.; Singer, I.: Comparing Fenchel-Moreau Conjugates with Level Set Conjugates. *J. Convex Anal.* 15 (2008), no. 2, 285-297.

Martínez-Legaz, J.-E.; Svaiter, B.F.: Minimal convex functions bounded below by the duality product. *Proc. Amer. Math. Soc.* 136 (2008), no. 3, 873-878.

Martínez-Legaz, J.-E.; Soubeyran, A.: A tabu search scheme for abstract problems, with applications to the computation of fixed points. *J. Math. Anal. Appl.* 338 (2008), no. 1, 620-627.

Martínez-Legaz, J.-E.: Convex conjugation and duality for the solutions of a functional equation. *Vietnam J. Math.* 35 (2007), no. 4, 481-494.

Martínez-Legaz, J.-E.; Martínón, A.: Boundedly connected sets and the distance to the intersection of two sets. *J. Math. Anal. Appl.* 332 (2007), no. 1, 400-406.

Hiriart-Urruty, J.-B.; Martínez-Legaz, J.-E.: Convex solutions of a functional equation arising in information theory. *J. Math. Anal. Appl.* 328 (2007), no. 2, 1309-1320.

Martínez-Legaz, J.-E.; Quah, John K.-H.: A contribution to duality theory, applied to the measurement of risk aversion. *Econom. Theory* 30 (2007), no. 2, 337-362.

Martínez-Legaz, J.E.; Sosa, W.: Duality for equilibrium problems. *J. Global Optim.* 35 (2006), no. 2, 311-319.

Martínez-Legaz, J.E.; Penot, J.-P.: Regularization by erasement. *Math. Scand.* 98 (2006), no. 1, 97–124.

Martínez-Legaz, J.E.; Singer, I.: Some conjugation formulas and subdifferential formulas of convex analysis revisited. *J. Math. Anal. Appl.* 313 (2006), no. 2, 717–729.

Martínez-Legaz, J.E.: Some characterizations of convex games. *Recent Advances in Optimization*, 293–303, Springer, Berlin, 2006.

López, M. A.; Martínez-Legaz, J.E.: Farkas-type theorems for positively homogeneous semi-infinite systems. *Optimization* 54 (2005), no. 4-5, 421–431.

Martínez-Legaz, J.E.; Rubinov, A.M.; Schaible, S.: Increasing quasiconcave co-radiant functions with applications in mathematical economics. *Math. Methods Oper. Res.* 61 (2005), no. 2, 261–280.

Martínez-Legaz, J. E.: On Brickman's theorem. *J. Convex Anal.* 12 (2005), no. 1, 139–143.

Martínez-Legaz, J. E.; Svaiter, B.F.: Monotone operators representable by l.s.c. convex functions. *Set-Valued Anal.* 13 (2005), no. 1, 21–46.

Martínez-Legaz, J. E.: Generalized convex duality and its economic applications. *Handbook of generalized convexity and generalized monotonicity*, 237–292, Springer, New York, 2005.

Dutta, J.; Martínez-Legaz, J. E.; Rubinov, A. M.: Monotonic analysis over cones. II. *Optimization* 53 (2004), no. 5-6, 529–547.

Dutta, J.; Martínez-Legaz, J. E.; Rubinov, A. M.: Monotonic analysis over cones. I. *Optimization* 53 (2004), no. 2, 129–146.

Hiriart-Urruty, J.-B.; Martínez-Legaz, J. E.: New formulas for the Legendre-Fenchel transform. *J. Math. Anal. Appl.* 288 (2003), no. 2, 544–555.

Martínez-Legaz, J. E.; Meseguer, A.: The indirect function of an NTU game. Optimization and related topics, 3. J. Math. Sci. (N. Y.) 116 (2003), no. 3, 3253–3265.

Getán, J.; Martínez-Legaz, J. E.; Singer, I.: $(*, s)$ -dualities. Optimization and related topics, 1. J. Math. Sci. (N. Y.) 115 (2003), no. 4, 2506–2541.

Bilbao, J. M.; Martínez-Legaz, J. E.: Some applications of convex analysis to cooperative game theory. Generalized convexity, generalized monotonicity, optimality conditions and duality in scalar and vector optimization. J. Stat. Manag. Syst. 5 (2002), no. 1-3, 39–61.

Daniilidis, A.; Martínez-Legaz, J. E.: Characterizations of evenly convex sets and evenly quasiconvex functions. J. Math. Anal. Appl. 273 (2002), no. 1, 58-66.

Martínez-Legaz, J. E.; Rubinov, A. M.; Singer, I.: Downward sets and their separation and approximation properties. J. Global Optim. 23 (2002), no. 2, 111-137.

Daniilidis, A.; Hadjisavvas, N.; Martínez-Legaz, J. E.: An appropriate sub-differential for quasiconvex functions. SIAM J. Optim. 12 (2001/02), no. 2, 407-420.

Martínez-Legaz, J. E.; Rubinov, A. M.: Increasing positively homogeneous functions defined on \mathbb{R}^n . Acta Math. Vietnam. 26 (2001), no. 3, 313-331.

Martínez-Legaz, J. E.; Volle, M.: Duality for d.c. optimization over compact sets. Optimization theory (Mátraháza, 1999), 139-146, Appl. Optim., 59, Kluwer Acad. Publ., Dordrecht, 2001.

Dragan, I.; Martínez-Legaz, J. E.: On the semivalues and the power core of cooperative TU games. Int. Game Theory Rev. 3 (2001), no. 2-3, 127-139.

Martínez-Legaz, J. E.; Théra, M.: A convex representation of maximal monotone operators. J. Nonlinear Convex Anal. 2 (2001), no. 2, 243-247.

Martínez-Legaz, J. E.; Singer, I.: Semi-spaces and bases of convexity systems in complete lattices. Constructive, experimental, and nonlinear analysis (Limoges, 1999), 235-243, CMS Conf. Proc., 27, Amer. Math. Soc., Providence, RI, 2000.

Martínez-Legaz, J. E.: Optimización matemática y sus aplicaciones económicas. *Varia Mathematica* 1 (2000), 97-153.

Martínez-Legaz, J. E.: A new characterization of totally balanced games. *Topics in mathematical economics and game theory* (Toronto, ON, 1995), 83-88, Fields Inst. Commun., 23, Amer. Math. Soc., Providence, RI, 1999.

Martínez-Legaz, J. E.; Volle, M.: Duality in d.c. programming: The Case of Several D.C. Constraints. *J. Math. Anal. Appl.* 237 (1999), no. 1, 657-671.

Luc, D. T.; Martínez-Legaz, J. E.; Seeger, A.: Least deviation decomposition with respect to a pair of convex sets. *J. Convex Anal.* 6 (1999), no. 1, 115-140.

Martínez-Legaz, J. E.; Sach, P. H.: A new subdifferential in quasiconvex analysis. *J. Convex Anal.* 6 (1999), no. 1, 1-11.

Bajona-Xandri, C.; Martínez-Legaz, J. E.: Lower subdifferentiability in minimax fractional programming. *Optimization* 45 (1999), no. 1, 1-12.

Martínez-Legaz, J. E.: Lexicographic utility and orderings. *Handbook of Utility Theory. Volume 1. Principles*, 345-369, Kluwer Acad. Publ., Dordrecht, 1998.

Flores-Bazán, F.; Martínez-Legaz, J. E.: Simplified global optimality conditions in generalized conjugation theory. *Generalized convexity, generalized monotonicity: recent results* (Luminy, 1996), 305-329, *Nonconvex Optim. Appl.*, 27, Kluwer Acad. Publ., Dordrecht, 1998.

Martínez-Legaz, J. E.; Singer, I.: On Φ -convexity of convex functions. *Linear Algebra Appl.* 278 (1998), no. 1-3, 163-181.

Martínez-Legaz, J. E.: A duality theory for totally balanced games. Proceedings of the IV Catalan Days of Applied Mathematics (Tarragona, 1998), 151-161, Univ. Rovira Virgili, Tarragona, 1998

Martínez-Legaz, J. E.; Singer, I.: On conjugations for functions with values in extensions of ordered groups. *Positivity* 1 (1997), no. 3, 193-218.

Martínez-Legaz, J. E.: Lexicographical characterization of the faces of convex sets. *Acta Math. Vietnam.* 22 (1997), no. 1, 207-211.

Martínez-Legaz, J. E.; Singer, I.: An extension of d.c. duality theory, with an appendix on $*$ -subdifferentials. *Optimization* 42 (1997), no. 1, 9-37.

Martínez-Legaz, J. E.: Characterization of R -evenly quasiconvex functions. *J. Optim. Theory Appl.* 95 (1997), no. 3, 717-722.

Martínez-Legaz, J. E.: Dual representation of cooperative games based on Fenchel-Moreau conjugation. *Optimization* 36 (1996), no. 4, 291-319.

Martínez-Legaz, J. E.; Théra, M.: ε -subdifferentials in terms of subdifferentials. *Set-Valued Anal.* 4 (1996), no. 4, 327-332.

Martínez-Legaz, J. E.: On the uniqueness of perfect matchings in bipartite graphs. *Exposition. Math.* 14 (1996), no. 5, 473-480.

Martínez-Legaz, J. E.; Santos, M. S.: On expenditure functions. *J. Math. Econom.* 25 (1996), no. 2, 143-163.

Coutat, P.; Volle, M.; Martínez-Legaz, J. E.: Convex functions with continuous epigraph or continuous level sets. *J. Optim. Theory Appl.* 88 (1996), no. 2, 365-379.

Martínez-Legaz, J. E.: On convex and quasiconvex spectral functions. Proceedings of the 2nd Catalan Days on Applied Mathematics (Odeillo, 1995), 199-208, Collect. Études, Presses Univ. Perpignan, Perpignan, 1995.

Martínez-Legaz, J. E.; Singer, I.: Dualities associated to binary operations on $\overline{\mathbb{R}}$. *J. Convex Anal.* 2 (1995), no. 1-2, 185-209.

Martínez-Legaz, J. E.: Fenchel duality and related properties in generalized conjugation theory. *International Conference in Applied Analysis (Hanoi, 1993)*. *Southeast Asian Bull. Math.* 19 (1995), no. 2, 99-106.

Martínez-Legaz, J. E.; Singer, I.: Subdifferentials with respect to dualities. *ZOR-Math. Methods Oper. Res.* 42 (1995), no. 1, 109-125.

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